

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the applications:

Listing of Claims:

1. (currently amended) An ~~AAV~~ AAV2 vector comprising a capsid protein with ~~an amino acid~~ a peptide insertion ~~following the capsid amino acid~~ at a position selected from the group consisting of:

(a) ~~a position corresponding to~~ position 139 in the VP1 capsid (SEQ ID NO: 13) and

(b) ~~a position corresponding to~~ position 161 in the VP1 capsid (SEQ ID NO: 13).

2. (currently amended) The ~~AAV~~ AAV2 vector of claim 1 wherein said position ~~corresponds to~~ is position 139.

3. (currently amended) The ~~AAV~~ AAV2 vector of claim 1 wherein said position ~~corresponds to~~ is position 161.

4. (currently amended) An ~~AAV~~ AAV2 vector comprising a capsid protein with ~~an amino acid~~ a peptide insertion ~~following the capsid amino acid~~ at a position selected from the group consisting of:

(a) ~~a position corresponding to~~ position 459 in the VP1 capsid (SEQ ID NO: 13);

(b) ~~a position corresponding to~~ position 584 in the VP1 capsid (SEQ ID NO: 13);

(c) ~~a position corresponding to~~ position 588 in the VP1 capsid (SEQ ID NO: 13); and

(d) ~~a position corresponding to~~ position 657 in the VP1 capsid (SEQ ID NO: 13).

5. (currently amended) The ~~AAV~~ AAV2 vector of claim 4 wherein said position ~~corresponds to~~ is position 459.

6. (currently amended) The ~~AAV~~ AAV2 vector of claim 4 wherein said position ~~corresponds to~~ is position 584.

7. (currently amended) The ~~AAV~~ AAV2 vector of claim 4 wherein said position ~~corresponds to~~ is position 588.

8. (currently amended) The ~~AAV~~ AAV2 vector of claim 4 wherein said position ~~corresponds to~~ is position 657.

9. (currently amended) The ~~AAV~~ AAV2 vector of claim 1, 2, 3, 4, 5, 6, 7 or 8 wherein the amino-acid peptide insertion comprises a targeting peptide.

10. (currently amended) The ~~AAV~~ AAV2 vector of claim 9 wherein the targeting peptide comprises the amino acids CDCRGDCFC (SEQ ID NO: 10).

Claims 11-16 (canceled)

17. (currently amended) The ~~AAV~~ AAV2 vector of claim 1, 2, 3, 4, 5, 6, 7, 8 or 10 wherein the insertion is flanked by a linker/scaffolding sequence.

18. (currently amended) The ~~AAV~~ AAV2 vector of claim 9 wherein the ~~amino acid~~ peptide insertion is flanked by a linker/scaffolding sequence.

Claims 19-20 (Canceled)

21. (currently amended) An ~~AAV~~ AAV2 vector of claim 17, wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and ALS carboxy terminal to the insertion.

22. (currently amended) An ~~AAV~~ AAV2 vector of claim 17 wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and LLA carboxy terminal to the insertion.

23. (currently amended) An ~~AAV~~ AAV2 vector of claim 17 wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and GLS carboxy terminal to the insertion.
24. (canceled)
25. (previously presented) A polynucleotide encoding the capsid protein of claim 1, 2, 3, 4, 5, 6, 7 or 8.
26. (original) A cell transfected with the polynucleotide of claim 25.
27. (withdrawn/currently amended) A method of producing ~~AAV~~ AAV2 vector comprising a capsid protein with ~~an amino acid~~ a peptide insertion, comprising growing a packaging cell and providing the packaging cell with helper virus functions, wherein said packaging cell comprises the polynucleotide of claim 25, the ~~AAV~~ AAV2 rep gene and a recombinant ~~AAV~~ AAV2 genome comprising DNA of interest flanked by ~~AAV~~ AAV2 inverted terminal repeats.
28. (withdrawn) The method of claim 27 wherein said cell expresses biotin ligase.
29. (withdrawn /currently amended) The method of claim 27 further comprising the step of treating said ~~AAV~~ AAV2 vector produced with biotin ligase.
30. (withdrawn /currently amended) A method of transferring a DNA of interest to a cell comprising delivering to the cell an ~~AAV~~ AAV2 vector of any one of claims 1 through 24.
31. (withdrawn) The method of claim 30 wherein the cell is a cancer cell.
32. (withdrawn) The method of claim 31 wherein the cell is an ovarian cancer cell.

33. (withdrawn) The method of claim 30 wherein the DNA of interest encodes a therapeutic peptide or a reporter peptide.

34. (withdrawn) The method of claim 30 wherein the DNA of interest is an antisense nucleic acid or ribozyme.

35. (withdrawn /currently amended) A pharmaceutical composition comprising the ~~AAV~~ AAV2 vector of any one of claims 1 through 24 in a pharmaceutically acceptable carrier.

36. (withdrawn /currently amended) An immunogenic composition comprising the ~~AAV~~ AAV2 vector of any one of claims ~~13, 19, 21~~ through 23 ~~or 24~~.

37. (withdrawn) A method for eliciting an immune response in an animal, said method comprising administering to the animal an immunogenic composition of claim 36.

38. (withdrawn /currently amended) A method of transferring a DNA of interest to a cell comprising delivering an ~~AAV~~ AAV2 vector encoding the DNA of interest to the cell, wherein said ~~AAV~~ AAV2 vector comprises a capsid protein containing one or more amino acid insertions that ablate the ability of the vector to bind heparin-sulfate proteoglycan and allow the vector to use a cellular receptor not used by wild type ~~AAV~~ AAV2 or DNA transfer.

39. (withdrawn /currently amended) A method of infecting a cell comprising administering an ~~AAV~~ AAV2 vector to the cell, wherein said ~~AAV~~ AAV2 vector comprises a capsid protein containing an amino acid insertion, wherein said ~~AAV~~ AAV2 vector comprises a capsid protein containing one or more amino acid insertions that ablate the ability of the vector to bind heparin-sulfate proteoglycan and allow the vector to use a cellular receptor not used by wild type ~~AAV~~ AAV2 for infection.

40. (withdrawn /currently amended) The method of claim 39 wherein the ~~AAV~~ AAV2 vector infects the cell at a titer comparable to wild type ~~AAV~~ AAV2 vector.

41. (canceled)

42. (currently amended) An ~~AAV~~ AAV2 vector of claim 18, wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and ALS carboxy terminal to the insertion.

43. (currently amended) An ~~AAV~~ AAV2 vector of claim 18 wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and LLA carboxy terminal to the insertion.

44. (currently amended) An ~~AAV~~ AAV2 vector of claim 18 wherein the linker/scaffolding sequence comprises the amino acids TG amino terminal to the insertion and GLS carboxy terminal to the insertion.